

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in this Application:

Listing of Claims:

1. (Currently amended) A vertical heat exchanger comprising:
a pair of first fluid passing ports for flow of a first fluid through a tube;
an upper tube sheet through which the tube passes, the underside of the upper tube sheet forming a boundary between the upper tube sheet and a shell;
a pair of second fluid passing ports for flow of a second fluid through the shell; and
a vent pipe for venting a gas, the gas locating to the upper portion of the shell during operation of the vertical heat exchanger, at least part of one end of the vent pipe being made of the upper tube sheet and being fixed via a flange to the boundary between the upper tube sheet and the shell and the other end of the vent pipe being connected outside the heat exchanger to a second fluid passing port passing the same fluid as the vent pipe, whereby the fluid flowing through the vent pipe drives out the gas.

2. – 4. (Cancelled).

5. (Cancelled).

6. – 17. (Cancelled).

18. (Previously presented) A vertical heat exchanger of claim 1 further comprising:

a drain pipe at least part of one end of which is made of a lower tube sheet part and reaches the interior of the shell and the other end of which is connected outside the heat exchanger to a second fluid passing port passing the same fluid as the drain pipe.

19. (Cancelled).

20. – 24. (Cancelled).

25. (Previously presented) A vertical heat exchanger according to claim 18, wherein the connection of the vent pipe with the second fluid passing port is further connected to a pipeline, the pipeline having at least a portion which is at a level higher than the upper tube sheet, and which comprises a valve, whereby the gas accumulated in the upper part of the shell is expelled through the valve in the pipeline.

26. (Currently amended) A vertical heat exchanger according to claim 18, further comprising a first source of the first fluid, the first source being fluidly connected to the first fluid passing port, and a second source of the second fluid, the second source being fluidly connected to the second fluid passing port, wherein the first fluid ~~comprising~~ comprises an easily polymerizable substance and is passed through the first fluid passing port of the heat exchanger and the second fluid ~~comprising~~ comprises a low temperature fluid and is introduced to the second fluid passing port as coolant.

27. (Previously presented) A vertical heat exchanger according to claim 26, configured such that when the second fluid flowing through the shell is introduced or discharged through the drain pipe instead of through the second fluid passing port, the second fluid in the lower part of the heat exchanger is stirred as it is fluidized.

28-29. (Cancelled).

30. (New) A vertical heat exchanger according to claim 1, wherein the flange comprises at least part of the upper tube sheet.